

# AERO-PAC MUDROC LAUNCH REPORT

Association of Experimental Rocketry Of the Pacific

The season opened with one of the best flying days on Saturday I can remember in a long time as the wind forgot to show up. Friday was no slouch either, with morning activities running at a brisk pace. A light north—north east breeze developed ramping up 10 to 15 with gusts to about 30 in the afternoon then retreating for the evening activities. Of most interest was the direction of the wind whereas we typically expect a southwest flow the N-NE flow occasionally felt cool. As a result, dust devil's were popping up across the playa with the warm-cool air mix.

Saturday was flyers paradise with no one willing to jinx it by uttering the “W” word. A few times during the warmest part of day, it actually felt hot when the breeze faded away. The lack of afternoon air movement provided ample opportunity for those little biting bugs to make an appearance and do some chomping. A light N-NE cooling breeze that evening pushed the night launches towards the south.

Sunday morning the traditional light breeze returned from the southwest building to a point of vengeance in retaliation for our great flying prosperity we enjoyed on Saturday. Range activities trailed off by 10 am when hats were being removed from heads by the winds. We broke down the range being mostly secured by noon. Thanks to all who helped get the range packed up as we are a 100% volunteer organization. All in all a great Fathers Day weekend.



Derek Jameieson's NOTORIOUS BETTIE



We really do need to acknowledge our Launch Director + Equipment Boss for the Mudroc launch, Darryl Paris. Tony Alcocer conducted the flyers meeting and Ken Biba provided additional information on range activities. Darryl brought out and returned the trailer from Empire to provide the infrastructure to have the launch. Darryl set range head orientation and provided the few available hands a place to start setting up. Thanks to all that helped to get the range up and operational.

We also want to thank our vendors for supporting us at Mudroc:

[WHAT'S UP HOBBIES](#)

[FRUITY CHUTES](#)

[BAY AREA ROCKETRY](#)



Tony A. and Darryl P. Photo J. DuBose

All was not without some minor issues; we do need to refresh some batteries as we just squeaked by with enough to get the job done. Richard Hagen put us on notice that many of the gel cells have succumbed to the heat and are mostly dust. We load tested the inventory and the majority showed voltage until placed under a load. Under load they drop to voltages insufficient to perform the job.



Darryl's kids helping out with set up.

Range operations were not 100% staffed, however we did manage to operate thanks to the gracious volunteers who provided their time and services especially in support of the model rocket pads that got a respectable work out.

A big thanks goes out to John & Donna Ballard for assisting a participant who's auto became disabled by providing a tow to Gerlach.

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As dry as it may appear we did have a participant get stuck for a number of hours, In a place known as PIUS COVE. Some of us old timers know how it got its name sake. Remember that areas near mountain drainages and on the edge of the playa can look dry on the surface but retain sub surfaces moisture or deep loose sand.

Darryl also wanted to pass along a big thanks to Eric K. and Erik E. for the help getting the spare tire swapped on the equipment trailer so he could go on down the road.

-Ken A



Gene Engelgau

Rocket Name: MAG MAX

H 48' Dia: 7.5 " 21 Lbs Research K800



Juni and Giancarlo Photo J. DuBose



Sampayan Brothers w/ Guitar Rocket Photo J. DuBose



## FLIGHT DATA

MOTOR	COMERCIAL	RESEARCH	CERT		LEVEL
			YES	NO	
A	19				
B	26				
C	28				
D	7				
E	9				
F	7				
G	11				
H	12		2		1
I	22	2	2	1	1
J	8	6			
K	12	7			
L	2	2			
M	2	3			
N	1	2			
unmarked	8				
Totals	174	22			

KIDS TOP 3	FLYERS	DAY	# FLIGHTS
Evan S.	19	Thursday	6
Tyus G.	14	Friday	52
Will S.	12	Saturday	132
		Sunday	6
RESEARCH TOP 2	FLYERS	Total	196

**Jim G.** 7  
 Derek J. 6  
 TOP COMERCIAL  
**Ron S.** 8  
 Congratulation's on the new certifications, flyer's Jason W. H-123  
 Roger L. I-161, John R. H175  
 and James F. on a I-195.



Derek Jamieson

Rocket Name: Notorious Bettie

H 9.0' Dia. 5.5" 14 Lbs. Research K-666 .



Doug Green

Rocket Name: HAWK

H 80" Dia. 7.5" 41 Lbs. L-1390G



As a reminder we still need some volunteer's for the upcoming AERONAUT launch Thursday August 2 ~ Sunday August 5th. To support trailer haul out and back from Empire as well a volunteer Launch Director for the launch. Sign ups for RSO, LCO shift slots can be done at <http://aeropac.org/launchduty.html> Please contact Tony Alcocer for further information.





Father and son team Michael & Adam Levi

Name: Shock & Awe H: 11' Dia: 4

M3700 to an L2020G ? It had a excellent start however, the sustainer failed to light. I hope they will bring it back for another try. Michael and Adam had many great flights over the weekend, including a flight with a carbon fiber rocket on an L1030 R to 18.5 K utilizing a nose cone mounted Garmin 220 with excellent rocket recovery results.









John Ballard sent in a very detailed flight report utilizing a GPS Telemetry system and corresponding track maps.

**Rocket name: Diablo Deal**

Make: Giant Leap Firestorm 54  
Diameter: 54mm (Minimum diameter)  
Weight: approximately 8 lbs take off weight  
Motor: Aerotech K185W  
Dual deploy with Missile Works altimeter

**GPS telemetry System:**

MEW, Balloon Boy Airborne Package  
MEW, Crystal Ball ground station  
Acer A100 Android tablet running GPS recording and mapping applications "BluetoothGPS4Android ver1.2.4" and "Back Country navigator"  
Motorola DROID phone running free Android apps "BluetoothGPS4Android ver 1.2.3" and "GPS Essentials".

Both ground based systems record real-time GPS flight data (one fix per second) to the their respective micro SD flash memory card.

Max altitude: ~ 10,900 ft AGL

GPS fix at apogee.

```
$GPRMC,153608.00,A,4050.42613,N,11908.49324,W,49.595,21.53,160612,,A*7C  
$GPGGA,153608.00,4050.42613,N,11908.49324,W,1,10,1.15,4523.3,M,-22.0,M,,*57
```

NMEA sentences at time of apogee indicate:

date: 160612 = 16 June 2012  
time: 153608.00 = 15 hours 36 minutes and 08.00 seconds universal time ( approx 8:36 AM local)  
Lat: 40 deg 50.42613 minutes north  
lon: 119 deg 8.49324 minutes west  
SPS fix using 10 satellites for solution  
HDOP = 1.15 (in the excellent range)  
Altitude: 4523.3 meters MSL  
Horizontal speed at apogee: 49.595 knots and heading at 21.53 deg true north

Takeoff altitude from previous fixes while on launch pad: 1191.8 meters MSL  
net altitude gain = 3331.5 meters ( slightly more than 10,900 feet AGL)

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MAX Altitude 9860 ft AGL from barometric altimeter. (looks like its time to get a new altimeter!)  
It was a very nice flight even though deployment and landing appeared to be out of sight of all who were looking.

Landing GPS fix:

\$GPRMC,153821.00,A,4050.40489,N,11908.65410,W,10.421,219.15,160612,,,A\*4D  
\$GPGGA,153821.00,4050.40489,N,11908.65410,W,1,11,0.81,1193.3,M,-22.0,M,,\*58

Last received GPS fix was approximately 2 or 3 meters above the ground and was used to drive the recovery truck directly to the landing spot.

Duration of flight: 2 minutes 39 seconds

This is the highest accurately documented flight so far for Diablo Deal.

GOOGLE MAP IMAGES

Courtesy John B.

